

Appl. No. 10/623779
Reply to Office action of 09/27/2004

Attorney Docket No. SEUS1

REMARKS/ARGUMENTS

Claims 1, 2, 7, 13-15, 18-19 were amended. Claims 3-6, 8-12 remain unchanged. A new claim 20 was added. Claims 16 and 17 were previously cancelled.

The above claim amendments are fully supported by the original specification as filed, and do not contain any new matter.

Claim 15 was amended to include all the limitations of original claim 15, original claim 1 and original claim 18. Claim 18 was amended to include all the limitations of original claim 15. Claims 1, 13 and 14 were amended to emphasize their differentiation from the cited prior art.

The Examiner rejected claim 1 under 35 U.S.C. 102 (b) as being anticipated by Rapoport et al (US 5,490,502). Rapoport et al discloses a system that includes a compressor, a tube connected to the compressor, wherein the compressor feeds compressed air through the tube to a continuous positive airway pressure (CPAP) mask 20 and the mask 20 in turn applies the compressed air into a sleeping person's nose (Fig. 9 and column 5, lines 51-53). However, the system that Rapoport et al discloses is a continuous positive airway pressure (CPAP) (column 5, lines 51-53) system that is used for treating the medical condition of obstructive sleep apnea syndrome (OSAS) (column 2, lines 38-42). It is well known in the CPAP art and as Rapoport et al points out CPAP is applied by a tight fitting nasal mask (column 1, lines 53-55). Rapoport et al also suggests "using a "standard" nasal cannula commonly used for supplying supplemental oxygen therapy to patients" where "Such a cannula does not provide a seal between the nasal prong and the naris" only for measuring small pressure fluctuations in the nares and without a connection to a breathing gas supply (Column 13 lines 57-67, and Column 14 lines 1-11).

The uniqueness of this invention is the fact that the inventors recognized that they can use an inexpensive loose fitting nasal air cannula that provides compressed air to a sleeping

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person's nose as an anti-snoring device and as a method for treating snoring, i.e., the system of this invention does not require a tight fitting nasal mask. Claim 1 and claim 13 were amended to point out this particular difference, i.e., "said prongs loosely entering into said sleeping person's nostrils". Furthermore, claims 1 and 13 include two specific nasal air cannula configurations that are adapted to the sleeping person's anatomy, i.e., one utilizing a ring (claim 1) and the other a Y-junction (claim 13) to comfortably fit the nasal air cannula onto the sleeping person's nose.

It is probably clear to a skilled person that the pressure drop over a section of a tube increases with decreasing diameter at constant flow. For a CPAP device tubes of about 20 mm diameter are used, whereas in the anti-snoring device of this application tubes of less than 10 mm are used (see claims, 8 and 9). Typical pressures administered in CPAP therapy range from 0 to 20 mbar and the pressure drop over the tube is about 1 mbar. Consequently the CPAP device can keep the pressure in the tight fitting mask approximately constant, even if the CPAP device measures the pressure at the inlet of the tube.

Things become different, if tubes with a small diameter as defined in claims 8 to 10 and conveyed by the expression "nasal air cannula" are used. At an inner diameter of 5 mm and a length of 1.5 m pressure drop increases to 100 to 200 mbar. This type of pressure drops points out that the anti-snoring device of this invention that uses a loose fitting nasal air cannula requires a completely different control and compressor/ventilator. That is probably the reason why no one thought of using a standard loose fitting nasal air cannula for CPAP therapy or - less ambitious - as an anti-snoring device. Accordingly, it is believed that claims 8 and 9 contain novel features of this anti-snoring device.

Based on the above arguments, it is believed that amended claims 1 and 13 are patentably distinguishable from Rapoport et al and as such should be allowable. Claims 2-12 depend directly upon claim 1 and as such should also be allowed.

The Examiner indicated that claim 18 contains allowable subject matter and would be

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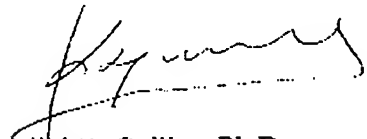
allowable if rewritten in independent form including all the limitations of the base claim. Accordingly we amended base claim 15 to include all the limitations of claim 1 and claim 18 and therefore this objection should be overcome. Claim 18 was also amended to include the limitations of the base claim 15 and should also be allowable. Claims 19 depends directly upon claim 18 and as such should also be allowed. Method claim 14 was amended to include the limitations of claim 18 and since claim 18 contains allowable subject matter, claim 14 should also be allowed. New claim 20 depends upon claim 14 and should also be allowed.

In view of the above, it is submitted that all claims should be in condition for allowance. Reconsideration of the rejections and objections is requested and allowance of all claims at an early date is solicited.

A petition for extension of time and a fee are also enclosed.

If this response is found to be incomplete, or if a telephone conference would otherwise be helpful, please call the undersigned at 617-558-5389

Respectfully submitted,



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